

ABSTRACT OF THE DISCLOSURE

A method and apparatus for comparing a stored data word to a comparison data word in a magnitude content addressable memory (MCAM) are disclosed. Each
5 cell of the MCAM includes a data memory cell for storing a data value and a magnitude comparator, coupled to the first memory cell. The magnitude comparator receives the data value and a comparison value as inputs, and produces two magnitude signals as outputs. The first magnitude signal indicates whether the comparison value is greater than the data value and the second magnitude signal indicates whether the
10 comparison value is less than the data value. The magnitude comparator also receives magnitude signals from the preceding MCAM cell. The previous magnitude signals are output as the first and second magnitude signals when the data value and the comparison value are equal. The MCAM enables data words of arbitrary length to be compared with comparison words. The MCAM cell may contain a second memory
15 for storing a mask value. When the mask value is set, the MCAM cell operates as if the comparison and data values were equal.